DWELLING SHOWING RAILING IN LIEU OF WALLS

[p.50(v)]

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leaf, a covering of the most available material is employed. The material used for this temporary thatch is usually a palm-leaf, but generally of some species of palm which provides a much less durable thatch than that used for the permanent dwelling. 342 [824]

These ranchos serve two purposes almost exclusively, namely, temporary shelters while traveling, and temporary shelters for work which lies too far from home to make daily journeys to and from the regular dwelling profitable. When traveling it is infeasible, not to say dangerous, to sleep upon the ground and without some kind of a roof, owing to the torrential rains which are almost sure to occur during the night, as well as to the danger from poisonous reptiles and other creatures. If, therefore, in traveling, it is impossible to reach a house by night, an early halt is made and a rancho constructed. This is rarely necessary except in case of a long trip over an uninhabited mountain trail, since along the navigable rivers are houses which may be reached in the course of the day's travel. Here the traveler, whoever he may be, is always welcomed according to the custom of the country, the unwritten law of which requires that shelter be given any traveler, whether he be an old acquaintance or a total stranger. When it is necessary, in gathering rubber or pita, in making canoes, or in doing any other work, to journey so far from the permanent dwelling as to make daily travel back and forth unprofitable, a small rancho is built. Such a structure may be used for a short time or for several seasons, it being re-thatched as occasion demands In the [574] [609] [222]

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243 ears each. These bunches are then hung from the roof to prevent attacks by rodents. Whenever possible the corn is hung where the heat from the fire will keep it from molding.

177 241 262 The foregoing are the chief agricultural food products of the Cayapa. Excepting the maize and the potato, all were introduced since the Spanish conquest and are now systematically cultivated. In this connection should be mentioned certain palms which provide food of one kind or other, and which, while they cannot be strictly classed under the head of agriculture, since they are not planted and tended as are the other plants mentioned, are of considerable economic importance.

222 One of these palms is that commonly known by the Spanish name chonta dura and called kanō′tcī by the Cayapa. One variety of this produces a cluster of red fruits, another a cluster of yellow fruits. The Cayapa [262] name for the fruit of this palm is ka′imbī. Both ripen in the late summer months and are much esteemed as food. [413] By means of a long hooked bamboo pole, these clusters are torn from just below the crown of the palm, which is 252 usually quite tall. The fruits are boiled in a cooking-pot or kettle; the tough skin is then easily peeled off, leaving the yellowish mealy meat ready to eat. In the center of this, in turn, is a very hard nut which, when cracked, yields a toothsome white meat with a flavor resembling that of ripe coconut. The mealy yellow meat is usually eaten with a little salt, but is especially good when eaten with a thick syrup made from cane juice. It is also frequently boiled in this syrup, the result being a kind of conserved fruit.

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While the fruit of the chonta dura is never eaten raw, there is another palm that produces a fruit similar in form but of a grayish yellow color, which is considerably esteemed in its raw state. Neither of these species of palm is purposely planted by the Cayapa, but when found they are carefully protected, and the fruits are harvested year after year.

One other species of palm, a very tall, slender one, produces a fruit which it eaten raw. To secure this the palm is usually cut down with a machete, which is always carried by everyone going into the jungle.

One of the most important of the natural products of this part of Ecuador is the tagua, or ivory nut. These palms, called ti′ñ tcī or ti′mō būlō, are scattered throughout the jungle and are carefully conserved by the Indians, especially where a grove of them is found near a dwelling. The importance of this palm applies both to the Indians and to the negroes and whites. The ripe nuts, tīmbū pū′ka, or *t*imō pōka, are an article of commerce, and their exportation to the United States and to Europe, where they are extensively used in making buttons, is an important industry. To the Indians, however, the tagua serves at least three other uses. When its green burs approach maturity, they are gathered and taken to the house, where they are cut crosswise with a machete. These burs are covered by an outer shell, called ha′ñda kīka. They are very hard and can be cut only with difficulty. Each of the nuts in this stage of its development is an almost transparent gelatinous substance, called tcapī *t*a′ka, which, may

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either be scooped out with the fingers or sipped. The nut is not used as a regular article of food, but more as a confection, its use being much restricted by the supply and the difficulty of opening the bur.

Another food derived from the tagua is the yellow, mealy and comparatively thin covering, called pĭm bûkû, or ya û'kû, which surrounds the ripe nut itself. This is peeled off and roasted over coals, if it is to be used immediately, or dried on the smoking rack above the fire if to be used later. The flavor of this roasted meat is similar to that of crisp, baked, fresh pork-rind. It is also frequently eaten raw, but in this state it has a rather unpleasant flavor, similar to that of raw acorns.

The gathering, curing, and use of the tagua leaf, which is almost exclusively employed in thatching houses, are described in the discussion of building construction.

A very good food is obtained from the palma real, called ûya'-tcĭ. This is a very large species and in form is perhaps the most beautiful of all the palms. Its very straight trunk, which sometimes reaches a height of seventy-five to a hundred feet, swells considerably at a point about midway of its height and resembles an entasic column surmounted by a huge umbrella-shape crown of leaves which wave gently in the breeze. In a large specimen of this species the trunk is from three to four feet in diameter at its base, swelling uniformly to a diameter perhaps one-third greater at the middle, and again decreasing toward the crown to a diameter somewhat less than that of the base. The mature leaves reach a length as great as twenty feet.

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The crisp, pure white, young leaves from the center of the crown of this palm are much esteemed as a food by the Cayapa. To secure these, however, it is necessary to cut down the whole plant, which is done with a machete or preferably an ax. The large, mature leaves of the crown are cut and pried away until the inner part of the trunk is reached. These outer, old leaves of the crown are even more fibrous and resistant than the trunk itself, and as it is almost impossible to cut them away with a machete, an ax is usually necessary. Owing to their great weight, and especially to the interlacing of the hard and very strong fibers at the bases of the leaves, a couple of chisel-pointed sticks, six feet or so in length, are needed to pry away the outer leaves after the mid-ribs have once been cut through with the ax. This inner trunk and those inner leaves which have already begun to unfold are next cut away, until the very young, succulent leaves, which as yet have not commenced to unfold and which appear in the form of a solid, slender cone of pure white, are reached. This cone often measures at its base as much as ten to fifteen inches in diameter, and may be even ten or twelve feet in length. It is a solid mass of crisp white matter, finer in texture than the innermost part of a head of cabbage and with a flavor resembling that of almonds. It is ordinarily eaten raw, either with or without salt, although a very good dish is also prepared by boiling it.

The palma real yields another useful product. The tough fibers, called nifitcû'a, which grow along the sides of the base of the mid-rib of the mature leaf, and which,

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as above mentioned, interlace with the fibers of adjoining leaves in such manner as to make it necessary to pry the leaves apart with wooden bars, are strong and pliable, and are woven into burden-bands by which heavy loads are carried. These fibers often attain a length of about four feet and are possessed of tensile strength sufficient to enable their use as strings on the wooden harp which is now made to a very limited extent by the Cayapa. This instrument was borrowed by them from the Indians of the interior, who in turn copied it from the Spanish conquerors.

Another palm, found to a limited extent along the river, is the coconut, called after the Spanish, kō'kō-tci. It does not, however, thrive at any considerable distance from the ocean, consequently few palms are found even at so short a distance up the Rio Cayapas as the mouth of the Onzole. Pl. CXXXI presents a view looking up-stream at the confluence of the Rio Onzole with the Rio Cayapas, and, upon the projection of land between them, the hacienda of one of the more prosperous of the negroes of the region. Several coconut palms appear in front of the house. Coconuts grow well along the immediate coast, and there are here large groves, the nuts being shipped to nearby villages and to points even as far away as Esmeraldas. They are purchased to a certain extent by the Indians, by whom they are used in very limited quantities as food, more especially for the so-called coconut-milk which is made from the ripe nuts.

In addition to the foregoing food-producing plants,

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these acts, combined with the spraying and smoking, gradually drive the spirits from the locality.

Another important product of this region is pita, called sa'nō, by the Cayapa, a plant resembling somewhat the yucca of the Southwestern desert region of the United States, but with leaves which sometimes reach a length of fifteen or sixteen feet. It is usually grown at some distance back from the river, and seems to thrive best in the dense shade of the jungle. When once well started it requires very little attention other than the cutting away of undergrowth and clearing of the field which is incidental to the harvesting of the leaves. These leaves yield long, very strong fibers, called sañ bu'tyū, which are twisted into two-ply strings. These are much used in net-making, in binding the selvage of textiles, for fish-lines, and for a variety of other purposes where very strong cord is required. The leaves are cut close to the ground and brought to the house in bundles such as those illustrated in pl. LXVI, where a large and a small bundle of the freshly cut, long leaves are shown leaning against the side of the house. Each leaf yields a large number of fibers, the laborious preparation of which will be discussed in speaking of string-making.

While pita is the strongest material and is considered the best from all points of view, there is another material, called in the local Spanish cosadera and in Cayapa señgi'lya, which is used especially where string or rope of large diameter and of moderate strength is desired, such as for hammocks. This material is derived from the bark of a tree and is obtained by beating in a manner

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222 283 similar to that used in making the bark cloth of the region. When the fibers are beaten out and prepared for twisting into cordage, they are usually stored away in bundles, such as that shown in pl. CXIX, 2, until needed.

222 287 An important economic plant of the Cayapa country is that from which is made the bark cloth called by the local Spanish name damajaua and by the Cayapa name tû'ckî. This is beaten from the bark of an indigenous tree called tû'ckîtci. The tree is felled and a section of the bark the length desired, usually six to eight feet, is carefully removed, being split along one side only. The bark may then be beaten immediately upon the same log, but it is ordinarily rolled up and taken to the house where a log is kept especially for this beating, which is done with a short maul, called tatci wima'so, such as that shown in fig. 6. One side of the maul, at least, is cut diagonally with grooves and corresponding ridges. The beating must be done within a few hours after the bark is taken from the tree, or before it dries considerably. Placing the strip of bark crosswise upon the log, it is beaten with considerable force with the grooved side of the maul, which is held at an angle of about forty-five degrees to the length of the bark. After beating one short section of the bark in this manner, it is moved across the log far enough to bring a new section into place, and in this way every part of the bark is reached.

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287 FIG. 6.—Beater for bark cloth

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species now used, the one producing a globular fruit called wa'iyū, and the other an ellipsoidal fruit called cā'lya, were introduced here from Colombia. Every house is provided with one or more of these trees, and usually at least one of each of the two species. These large gourd-like fruits are produced in considerable numbers by such a tree and find a variety of uses. They are gathered when just ready to turn from green to ripe and are immediately hollowed out into utensils of several kinds. The details of manufacture and the uses of these utensils are treated on pages 166-173.

Another fruit, some species of which are said to be indigenous and some introduced, which is found abundantly in this region, is what is called by the local Spanish name guabo or guaba. This requires no cultivation, but the trees are carefully guarded against destruction. It is rarely if ever purposely planted, but grows from the accidental dropping of seeds. In the vicinity of almost every house there are several trees of one or more of these species. The fruits, which grow in long pods, are much esteemed and are almost invariably eaten raw. Each variety has its own special name, as follows:

Cayapo	*Spanish*
macha'-ga cllyū,	guabo de machetun (machete guabo, so named on account of the shape of the pod).
ni'iga cllyū,	guabo de tarugo.
pā' cllyū,	guabo dulce (sweet guabo). The Cayapo name signifies "water guabo."
sa' cllyū,	guabo agria (sour guabo). The Cayapo name also signifies "sour guabo."
pū' cllyū,	guabo.

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Of these species the one most commonly found about the houses and the most used is pá' ellyā, a wide-spreading tree reaching a height of about forty feet. A general view of this species is shown in pl. v, in which the broad, branching top of one of the trees is shown prominently against the sky toward the left of the center of the picture. The habits of growth of the other varieties are similar to this.

A species of small Composite, called le'lyā, which somewhat resembles the marigold, is grown with considerable care, its special use being to provide decorative flowers for fiestas. The flowers are made up into long garlands which are draped about the altar of the church or are worn about the necks of those celebrating the fiesta. They are also sometimes inserted in the hair, over the ears, or about the clothing.

Upon the drying platform attached to the house there is almost always a fragment of an old canoe or some broken pots or other utensils in which are grown several of the various species of medicinal herbs, such as limoncillo, or of other plants valued for the scent of their leaves or seeds, or plants used as teas.

In addition to those already mentioned in greater detail, there are several other introduced fruits, such as the papaya, the caimito, the orange, the lemon, the lime, and the sour sap, which are grown so rarely by the Cayapa as to make them almost negligible in a consideration of the vegetal products of the people. They spring up almost always by the accidental falling of seeds in favorable soil, rather than by intentional

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in his craftsmanship. The less particular artisan simply paints rude designs with a small coconut-bark brush.

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The designs, called kä'm bilya, used upon canoes are varied. They are largely geometric, consisting chiefly of dots, lines, and triangles, although sometimes animal figures are employed. These last, however, appear only on those canoes made by the Cayapa for sale. On pl. LXXIII-LXXV are shown most of the designs used by the Cayapa on canoes made for their own use. They bear no special symbolic significance, none of them is typical of any special group of people, and no individual ownership is connected with any of them. In large measure they bear no names other than the generic kä'm bilya, literally "canoe design."

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As before mentioned, beva is the wax made by certain small bees common to the region. It is called amü'ya, and is of two kinds, black and yellow, the latter being much preferred. The particular bees which produce the beva are of four different species. A small black bee, which lives in hollow trees and is called paba ta'nda, makes the wax of the best quality and in greater quantities than any of the others. Another small black species, called ta'nda also, lives likewise in hollow trees and makes much more honey than wax, but a certain amount of its wax is used. A third species is called citomi'ski; it is also black, but builds its nest in the ground and its wax is used to a limited extent. The fourth species is a small yellow bee called amü a'ma; its wax is black.

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Beva is obtained by smoking out the bees and chopping

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237 open the log or chopping down the tree. None of
222 these species of bees makes honey of any particular value, hence they are sought almost exclusively for the wax. The bees are very vicious, and therefore a certain amount of danger attends the process of obtaining the brea. In smoking out the bees, ordinarily a wide strip of green bark, about three feet long, or the large blossom bract of a large species of palm, is used as a case in

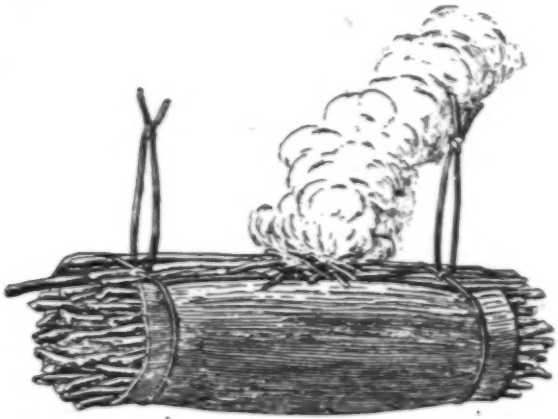

FIG. 12.—Device for smoking out bees

which to place the green or wet wood and coals used to make the smudge. Near its ends this bundle is securely bound by two pieces of pitigua which project enough to make loops about fifteen inches in length, by which the apparatus may be carried about. When completed, this smudging device (fig. 12) is about ten or twelve inches in diameter and three feet in length. It is taken by a man, who has wound about his head and the other exposed parts of his body handkerchiefs or other pieces of

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cloth, and is placed near the opening at which the bees enter and leave the tree or log. The smudge apparatus is then fanned until a volume of smoke is produced, which in time drives away or stupefies the bees and makes possible the taking of the brea. The wax is found in large blocks, usually at the bottom of the nest, and is cut out with an ax or a machete. It keeps indefinitely, and is stored either in the house or is buried in the ground until needed.

Shortly before or sometimes just after painting the canoe with brea, a hole is cut in the middle of the prow at a point just back of the slightly raised transverse line upon its upper surface, for the cable by which the canoe is moored. This cable, called kondō′pī, consists usually of from two to four strands of carefully selected pitigua twisted together. Such a cable of three strands is shown in pl. XCI, 1. The length of the cable usually varies according to its diameter and the number of its strands, governed by the size of the canoe for which it is made. For very small canoes, frequently a single strand of pitigua is sufficient, but in most cases a two-strand cable is required; very large canoes have three-strand and sometimes even four-strand cables. In making a cable it is necessary first to twist each of the pitigua strands separately, the bark of the strands first having been removed. By means of this twisting the strand is rendered pliable, as well as stronger, since the fibers, which ordinarily would be parallel, are forced to twist around one another. The twisted strand is now wound round a hooked stick, such as that used in cleaning the

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In the second class of material may be included the thin bark of five species of endogenous plants: rampile, hoja blanca, hoja negra, chocolatilla, and crinande, which are used for making the lighter and less durable baskets, especially the hamper-shape baskets such as those shown in pl. XCIII, 2, 5, 6, 10, 11, as well as diminutive trinket baskets like those in figs. 15–17 (pp. 200-201). These materials, especially rampile, are used also in making baskets of other forms, but requiring no great durability or strength. Baskets of this class are shown in figs. 7–9 of pl. XCIII. Rampile is also extensively employed in making fans and mats. In the third class of materials is the leaf of the palm known in Spanish as chapil, sometimes also called milpeso, and, by the Cayapa, kūla′pō. Two forms of basket, one conical, the other square-sided (pl. XCII, 2, 5 respectively), are made of this material. Such baskets are suitable only for temporary use, since after a day or two the material becomes dry and brittle; while green, however, it is pliable and fairly strong. The conical basket (fig. 2) serves a ceremonial as well as a utilitarian purpose, being employed by shamans in their medicine practices.

The most important of the various basketry materials is the pitigua. This durable fiber is derived from the long roots of a single species of aerophitic plant which usually grows in the upper branches of trees and sends its long, slender roots to the ground. Pitigua is much sought for various purposes by the negroes and whites of the region, as well as by the Indians, so that along the lower course of the Rio Cayapas it has become somewhat scarce. When the plant is found, however, its roots are

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easily gathered, since by simply pulling on them they usually break off at or near the plant itself, and often a root seventy-five or even a hundred feet in length is obtained. It is employed not only for basket-making but for many other purposes, such as for binding together the parts of a house-frame (figs. 2–5), for binding the palm-leaf thatch upon the roof (pl. VII), and indeed wherever material for tying or binding is needed. It serves also the many purposes for which civilized people use string and rope, as for mooring canoes, securing animals, etc. Pitigua fiber is practically indestructible so far as dampness is concerned, and may even be kept wet for a considerable time without rotting. If kept from direct contact with water, however, it will last for years even in this humid climate, as is shown by the bindings on the frames of some of the Cayapa houses that have been in use for ten or fifteen years at least.

When gathered these roots are usually made up into large coils (pl. XCI, 4) and laid away in a dry place until needed. To render them pliable they are soaked over night in the river. In two forms of baskets the warp elements are made of the smaller whole roots of the pitigua, otherwise the material is always split into strips or splints, which are prepared as follows:

The bark of the root being first removed, its inner woody portion is split into long, thin ribbons. The individual fibers of the root are extremely long and straight, hence when once started a ribbon can be split the full length of the root with almost perfect evenness. Usually one end of the root is taken up and split with a knife or machete, for a distance of an inch or two, into

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285 trimmed to approximately equal widths, but for ordinary baskets this is not deemed necessary.

222 285 824 In case the pitigua root is not available, there are other parasitic plants which send aerial roots to the ground that may be used for temporary baskets.

Of the less durable and lighter materials used for making hamper-shape baskets, the most important is rampile, which comes from the bark of the petiole of a fan-leaf palm which produces thin strips from one-eighth to one-half inch in width and from three to twelve feet in length. In splitting off this bark, the circumference of the end of the stem is cut with a sharp instrument into as many segments as the desired width of the strips demands. Usually the strips on several stems are started at one time and then the bark of each is split off by pulling with the fingers one strip after another. In splitting the bark in this manner, a certain amount of the inner succulent fiber of the stem is taken with it. To remove this a number of strips, perhaps twenty, are grasped between the great and second toe in such manner that one end of the bunch of strips reaches almost to the body. Thus held, the strips are taken in turn and the succulent portions cut transversely at a point a couple of inches from the end. The strips are now taken rapidly one by one and the bark is peeled from the succulent fibers. It remains only to size the strips, that is, to bring them to an even width. This is done by splitting, since in this material, as in the pitigua, the fibers are long and straight, so that when once started they part evenly the full length of the strip. It is rarely necessary to do any special cutting and trimming to make these strips of proper widths.

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The material of this class next in importance to the rampile is that obtained from the petiole of the hoja blanca, called by the Cayapa fī'ba hakī, signifying, as does the Spanish term, "white leaf." This plant has a long pinnate leaf somewhat similar to that of the banana, but with a long, round, slender, and fairly hard petiole. It derives its name from the fact that the under-surface of the leaf-blade has a thick coating of white bloom. The strips of this material used in basket-making are obtained from the petiole of the leaf in the same manner as are those of the rampile, except that before splitting off the bark it is scraped. This removes a thin, succulent outer coat of light-green, and leaves the inner creamy-white bark which is hard and tough, though very thin. This hoja blanca bark is used chiefly for making small hamper-shape baskets (figs. 15–17) used as receptacles for trinkets, though it is frequently employed in making fans, especially the finer ones. It is much less durable than is the rampile, and for that reason, as also on account of its thinness, it is not adapted to the manufacture of large hampers or of mats.

The blades of the leaves of hoja blanca find a variety of uses, chief among which is as a covering for cargoes of canoes to protect them against rain. The leaves are much tougher than are those of most plants of a similar kind in this region and shed water perfectly. They are used even for repairing leaks in house-thatch, though they are never employed for entirely thatching a permanent building.

Hoja blanca is the only basket material which is ever artificially colored. The strips are stained with red

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285 386 achote, the plant which produces the red face-paint used by the Cayapa. This coloring matter is rubbed on the stem after it has been scraped down to the hard white layer of the bark and before the bark is stripped from the stem. The colored strips are used occasionally as a means of producing the geometric designs used in small hamper-shape baskets and in fans.

285 824 Three other plants with a habit of growth similar to that of the hoja blanca occasionally furnish materials for the hamper-shape baskets. They are the chocolatilla, called by the Cayapa tcōkōla′te, which yields a brown material; the hoja negra, called e′lūñ hakī; and the crinande, called viñga′tcī. The material in each of these plants comes from the petioles of the leaves. They are obtained and manipulated in the same manner as is that derived from the hoja blanca. None of the three, however, is ever colored.

285 482 [222] As above mentioned, the leaf of a large species of palm, called in Spanish chapil, is used on rare occasions for basket-making. Should a person be out hunting, or for any other reason be at a considerable distance from his house and unexpectedly find some fruit or other commodity which he cares to take home, he may, by securing a couple of the large leaves of the chapil, quickly fashion a temporary burden-basket, such as either of those shown in pl. XCII, 2, 5, in which to carry them. Such a basket is never kept for further use, for as soon as the leaves become dry they are very brittle and entirely worthless.

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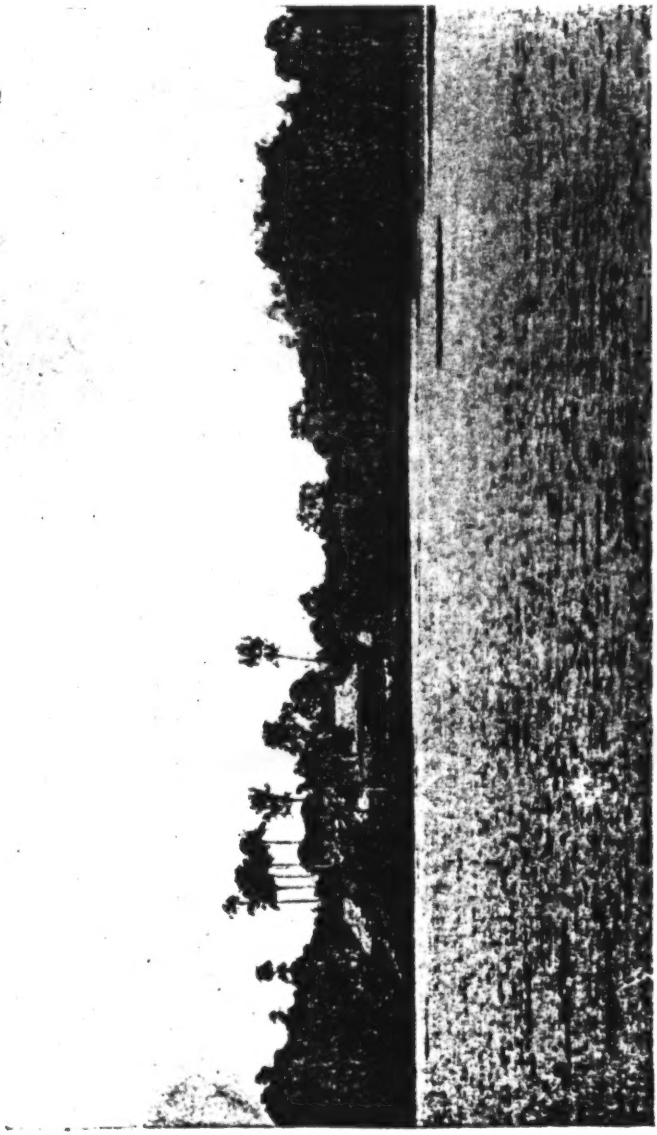

BARRETT—CAYAPA INDIANS

HACIENDA OF A NEGRO IN A GROVE OF COCONUT PALMS